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CATALOG DOCUMENTATION
NATIONAL LAKE ASSESSMENT DATABASE
NORTHEAST REGION 2007
DESIGN INFORMATION

TABLE OF CONTENTS

1. DATASET IDENTIFICATION

1.1 Title of Catalog document

National Lake Assessment (NLA) Database
Northeast Region 2007
Design Information

1.2 Author of the Catalog entry

Melissa Hughes, Raytheon MOS

1.3 Catalog revision date

September 2012

1.4 Dataset name

Lake Identification Status

1.5 Task Group

National Lake Assessment

1.6 Dataset identification code

NA

1.7 Version

NA

1.8 Request for Acknowledgment

EPA requests that all individuals who download National Lake Assessment data acknowledge the source of these data in any reports, papers, or presentations. If you publish these data, please include a statement similar to: "Some or all of the data described in this article were produced by the U. S. Environmental Protection Agency through its National Lake Assessment (NLA) Program".

2. INVESTIGATOR INFORMATION

2.1 Principal Investigators

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John Kiddon, U.S. EPA NHEERL-AED
Jeff Hollister, U.S. EPA NHEERL-AED

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2.2 Sample Collection Investigators
NA

2.3 Sample Processing Investigators
NA

3. DATASET ABSTRACT

3.1 Abstract of the Dataset

The Design Information file reports point features for lakes, ponds, and reservoirs from the sampling frame for the EPA National Lake Assessment (NLA) project. Location information is presented as well as lake characteristics, such as depth, size, accessibility and ecoregions. Key features were evaluated to determine which lakes were sampled in the NLA. The site selection for the survey ensures that EPA can make unbiased estimates concerning the health of the target population of lakes with statistical confidence.

3.2 Keywords for the Dataset

point features, National Lakes Assessment, sampling frame, unbiased estimates, site selection, Lakes Ecosystem Services

4. OBJECTIVES AND INTRODUCTION

4.1 Program Objective

The U.S. Environmental Protection Agency (EPA), in partnership with state and tribal organizations, has designed the Survey of the Nation’s Lakes to periodically assess the condition of the Nation's surface waters. The National Lake Assessment is a statistical assessment of the condition of our Nation’s lakes, ponds, and reservoirs and is designed to: 1) Assess the condition of the Nation’s Lakes; 2) Establish a baseline to compare future surveys for trends assessment and evaluate trends since the 1970’s National Eutrophication Survey Study and 3) Help build State and Tribal capacity for monitoring and assessment and promote collaboration across jurisdictional boundaries. This survey will generate a statistically-valid report on the condition of our Nation’s water resources and identify key stressors to this system. The goal of the Nation's Lakes project is to address two key questions about the quality of the Nation’s lakes, ponds, and reservoirs: 1) What percent of the Nation’s lakes are in good, fair, and poor condition for key indicators of trophic state, ecological health, and recreation? and 2) What is the relative importance of key stressors such as nutrients and pathogens?

The Survey is designed to be completed during the summer growing season before lake turnover (June through September). Field crews will collect a variety of measurements and indicators from an “index site” located at the deepest point of the lake (≤50 meters, and near the center if sampling a reservoir), and document conditions of the littoral zone and shoreline from stations around the lake.

EPA selected sampling locations using a probability based survey design. Sample Surveys have been used to determine the status of a population or resources of interest using a representative sample of a relatively few members or sites. Using this survey design allows data from the subset of sampled lakes to be applied to the larger target population and assessments with known confidence bounds to be made.

4.2 Dataset Objective

The objective of the Design Information file was to evaluate key lake features to determine which lakes were sampled in the NLA.

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4.3 Dataset Background Discussion
The Design Information file reports point features and lake characteristics for lakes, ponds, and reservoirs from the sampling frame for the EPA National Lake Assessment (NLA) project.

4.4 Summary of Dataset Parameters
NA

5. DATA ACQUISITION AND PROCESSING METHODS

5.1 Data Acquisition
NA

5.1.1 Sampling Objective
NA

5.1.2 Sample Collection: Methods Summary
NA

5.1.3 Beginning Sampling Dates
5/8/2007

5.1.4 Ending Sampling Dates
10/18/2007

5.1.5 Sampling Platform
NA

5.1.6 Sampling Equipment
NA

5.1.7 Manufacturer of Sampling Equipment
Not applicable

5.1.8 Key Variables
Not applicable

5.1.9 Sample Collection: Calibration
NA

5.1.10 Sample Collection: Quality Control
NA

5.1.11 Sample Collection: References
USEPA. 2007. Survey of the Nation's Lakes. Field Operations Manual. EPA 841-B-07-004. US Environmental Protection Agency, Washington, DC. (http://water.epa.gov/type/lakes/lakessurvey_index.cfm#CP_JUMP_474534)

5.1.12 Sample Collection: Alternate Methods
NA

5.2 Data Preparation and Sample Processing
Physical data did not require analytical processing.

5.2.1 Sample Processing Objective
NA

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5.2.2 Sample Processing: Methods Summary
NA

5.2.3 Sample Processing: Calibration
NA

5.2.4 Sample Processing: Quality Control
NA

5.2.5 Sample Processing: References
NA

5.2.6 Sample Processing: Alternate Methods
Not Applicable

6. DATA ANALYSIS AND MANIPULATIONS

6.1 Name of New or Modified Value
NA

6.2 Data Manipulation Description
The National Lakes Assessment (NLA) is one component of the National Aquatic Resource Surveys. This program is the first-ever assessment of lakes across the continental United States using consistent protocols and a modern, scientifically defensible statistical survey approach. The Design Information file reports point features for lakes, ponds, and reservoirs from the sampling frame for the EPA National Lake Assessment (NLA) project. Key features were evaluated to determine which lakes were sampled in the NLA. To be included, a site had to be a natural or man-made freshwater lake, pond or reservoir, greater than 10 acres (4 hectares), at least 3.3 feet (1 meter) deep, and with a minimum of a quarter acre (0.1 hectare) open water. After applying the criteria, 68,223 waterbodies were considered lakes by the NLA definition and thus comprised the target population. Of these, 49,546 lakes could be accessed and a total of 1,028 lakes were sampled and represent the total lake population. For quality assurance purposes, 10% of the target lakes were randomly selected for a second sampling later in the summer. The greater the number of sites sampled, the more confidence in the results. The number of sites included in the survey allows EPA to determine the percentage of lakes nationwide and within predetermined ecoregions that exceed a threshold of concern with 95% confidence.

7. DATA DESCRIPTION

7.1 Description of Parameters

7.1.1 Components of the Dataset

Attribute	Format	Description
WB ID	NUMBER(10)	Unique Waterbody ID
NLA ID	VARCHAR2(60 BYTE)	National Lake Assessment study unique ID for each lake
LAKE NAME	VARCHAR2(125 BYTE)	National Lake Assessment lake name
VISIT NUMBER	NUMBER(3)	Sequential visit number within year
SAMPLED	VARCHAR2(20 BYTE)	Site sampled code
DATE COLLECTED	DATE	Date sample collected
REPEAT	VARCHAR2(20 BYTE)	Repeat visit lake (YES/blank)

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SITE TYPE	VARCHAR2(50 BYTE)	PROB_Samp:Lake is from probability sample and can be used for population estimation. REF_Lake: Lake is not from probability sample and was selected as a candidate reference lake.
LAKE STATUS	VARCHAR2(50 BYTE)	Eval. status. _Denied (access denied). _Inaccess (physically inaccessible). _Other. _LT_4ha (< 4ha). _Shallow (< 1m deep). _Vegetated (< 1000 m2 open H2O). _Saline (tidal). Special_Purpose (aquacult., disposal, WWT, or evap.). Not_Lake (other)
TNT STATUS	VARCHAR2(50 BYTE)	Target:Non-target evaluation status derived from LAKE_SAMP
ALBERS X	NUMBER(15,6)	Polygon centroid x coordinates from ArcGIS geometry calculator (PCS: USA Contiguous Albers Equal Area Conic projection)
ALBERS Y	NUMBER(15,6)	Polygon centroid y coordinates from ArcGIS geometry calculator (PCS: USA Contiguous Albers Equal Area Conic projection)
FIELD LONGITUDE	NUMBER(12,6)	Longitude (decimal degrees) recorded from the field form (lake verification)
FIELD LATITUDE	NUMBER(12,6)	Latitude (decimal degrees) recorded from the field form (lake verification)
FIELD SOURCE	VARCHAR2(25 BYTE)	Field location source: Index_Site: location where index sample was taken. Launch_Site: point where boat was launched. Map_Loc: Location obtained from design file. Priority: lake index site; then launch site, then map location
STATE CODE	VARCHAR2(10 BYTE)	State assigned by US EPA-AED within which the greater percentage of lake area falls
COUNTY	VARCHAR2(50 BYTE)	County assigned by US EPA-AED within which the greater percentage of lake area falls
EPA REGION	VARCHAR2(50 BYTE)	EPA Region assigned by State
NHD NAME	VARCHAR2(50 BYTE)	Lake name (from NHD)
AREA CATEGORY	VARCHAR2(25 BYTE)	Lake area unequal probability category (7 categories)
NES LAKE	VARCHAR2(25 BYTE)	NESLake-Lake was included in 1970s National Eutrophication Survey
NES LAKE ID	VARCHAR2(25 BYTE)	NESLake-Lake was included in 1970s National Eutrophication Survey
STRATUM	VARCHAR2(50 BYTE)	Probability survey design stratum. NLALake is single stratum
PANEL	VARCHAR2(50 BYTE)	Panel_1-lake was included in base design. OverSamp-Lake was part of over sample of lakes used for replacing lakes in base design if they could not be sampled
DESIGN CATEGORY	VARCHAR2(50 BYTE)	Probability survey design categories used to assign unequal probability of selection
MD CATEGORY	NUMBER(16,13)	Unequal selection probability for lake
SITE WEIGHT	NUMBER(15,11)	Initial site weight based on base design. DO NOT USE for population estimation
ADJUSTED WEIGHT	NUMBER(15,11)	Adjusted site weight. Use for population estimation
URBAN	VARCHAR2(25 BYTE)	Urban lake? (Yes/No)

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WSA ECOREGION 3	VARCHAR2(25 BYTE)	Wadeable Stream Assessment three aggregrated Omernik level 3 ecoregions
WSA ECOREGION 9	VARCHAR2(25 BYTE)	Wadeable Stream Assessment three aggregrated Omernik level 9 ecoregions
ECOREGION LEVEL 3	NUMBER(4)	Omernik level 3 ecoregion number
ECOREGION LEVEL 3 NAME	VARCHAR2(250 BYTE)	Omernik level 3 ecoregion number name
NUTRIENT ECOREGION	VARCHAR2(15 BYTE)	Nutrient ecoregion, based on EPA nutrient criteria documents for lakes & reservoirs)
NUTRIENT REGION NAME	VARCHAR2(250 BYTE)	Nutrient ecoregion name
LAKE ORIGIN	VARCHAR2(25 BYTE)	Lake origin (MAN-MADE, NATURAL [which includes natural lakes augmented by dams])
MAXIMUM DEPTH	NUMBER(6,1)	Maximum observed lake depth (m)
FIELD FLAG	VARCHAR2(50 BYTE)	Data qualifier flag for lake info data
LONGITUDE	NUMBER(14,9)	Longitude (decimal degrees) obtained from NHD (NAD83)
LATITUDE	NUMBER(13,9)	Latitude (decimal degrees) obtained from NHD (NAD83)
REF CLUSTER NAME	VARCHAR2(500 BYTE)	NLA Reference Cluster Description
NUTRIENT REFERENCE SITE	VARCHAR2(10 BYTE)	Least Disturbed Reference Site (Y/N)
SIZE CLASS	VARCHAR2(30 BYTE)	Lake area size class
LAKE DEPTH	NUMBER(6,1)	Lake Depth (m) at Index Site
ELEVATION	NUMBER(7,2)	Site elevation (meters) from the National Elevation Dataset

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7.1.2 Precision of Reported Values

NA

7.1.3 Minimum Value in Dataset / 7.1.4 Maximum Value in Dataset

PARAMETER	MIN	MAX
MAXIMUM EPTH	0.5	97
LAKE DEPTH	0.5	97
ELEVATION	0	3403
VISIT NUMBER	0	1
ECOREGION LEVEL 3	28	84
MD CATEGORY	0	0.759758224
WEIGHT	0	1707.83285
ADJUSTED WEIGHT	0	810.6246019
LONGITUDE	-124.6325273	-67.2086
LATITUDE	25.032719	49.073664
ALBERS X	-2312098.727	2228193.166
ALBERS Y	-1282392.792	1532272.432

7.2 Data Record Example

7.2.1 Column Names for Example Records

NLA ID,VISIT NUMBER,SAMPLED,DATE COLLECTED,REPEAT,SITE TYPE,LAKE STATUS, TNT STATUS,ALBERS X,ALBERS Y,FIELD LONGITUDE,FIELD LATITUDE,FIELD SOURCE, STATE CODE,COUNTY,EPA REGION,NHD NAME,LAKE NAME,AREA CATEGORY,NES LAKE, NES LAKE ID,STRATUM,PANEL,DESIGN CATEGORY,MD CATGORY,WEIGHT, ADJUSTED WEIGHT,URBAN,WSA ECOREGION 3,WSA ECOREGION 9,ECOREGION LEVEL 3,

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ECOREGION LEVEL 3 NAME,NUTRIENT ECOREGION,NUTRIENT ECOREGION NAME,
LAKE ORIGIN,MAXIMUM DEPTH,FIELD FLAG, LONGITUDE,LATITUDE,
REFERENCE CLUSTER,REF CLUSTER NAME,REFERENCE CLASS,
NUTRIENT REFERENCE SITE,SIZE CLASS,LAKE DEPTH,ELEVATION,WB ID

7.2.2 Example Data Records

NLA06608-0030,0,,,,PROB_Lake,Not_Needed,NotNeeded,603989.2301,
979198.9345,,,,MI,Michigan,Iron,Region_5,,,(1,4],,,NLALake,
Panel_1,(1,4],0.000579901,1707.832853,0,NO,PLNLOW,UMW,50,
Northern Lakes and Forests,VIII,Nutrient Poor Largely Glaciated Upper
Midwest and Northeast,,,,-88.2006702,46.03898158,,,,,01: <10 ha,,
NLA06608-0031,1,YES,6/13/2007,YES,PROB_Lake,Target_Sampled,
Target,1224615.667,348635.8438,-81.518455,39.776322,Index_site,OH,Ohio,
Noble,Region_5,Caldwell Lake,Caldwell Lake,(20,50],,,NLALake,Panel_1,
SAP_OH_(20,50],0.029431985,33.64956123,28.82219287,YES,EHIGH,SAP,70,
Western Allegheny Plateau,XI,The Central and Eastern Forested
Uplands,MAN-MADE,4.9,,-81.51745185,39.77645357,B,
E. Highlands: Cold northern lakes and reservoirs,SO-SO,N,02:>10-50 ha,
4.9,241.93,

8. GEOGRAPHIC AND SPATIAL INFORMATION

8.1 Minimum Longitude (Westernmost)

-80.208767 decimal degrees

8.2 Maximum Longitude (Easternmost)

-66.99852 decimal degrees

8.3 Minimum Latitude (Southernmost)

36.702015 decimal degrees

8.4 Maximum Latitude (Northernmost)

47.416054 decimal degrees

8.5 Name of area or region

The National Lake Assessment Northeast Region covers the northeastern US from Maine to West Virginia.

9. QUALITY CONTROL AND QUALITY ASSURANCE

9.1 Measurement Quality Objectives

NA

9.2 Data Quality Assurance Procedures

NA

9.3 Actual Measurement Quality

NA

10. DATA ACCESS

10.1 Data Access Procedures

Access data at: http://www.epa.gov/aed/lakesecoservices by clicking on the database link.

10.2 Data Access Restrictions

None

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10.3 Data Access Contact Persons

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10.4 Dataset Format

Comma-delimited ASCII files

10.5 Information Concerning Anonymous FTP

Not available

10.6 Information Concerning WWW

See Section 10.1 for WWW access

10.7 EMAP CD-ROM Containing the Dataset

Data not available on CD-ROM

11. REFERENCES

USEPA. 2007. Survey of the Nation's Lakes. Field Operations Manual. EPA 841-B-07-004. US Environmental Protection Agency, Washington, DC. (http://water.epa.gov/type/lakes/lakessurvey_index.cfm#CP_JUMP_474534)

USEPA. 2009. Survey of the Nation's Lakes: Integrated Quality Assurance Project Plan. EPA/841-B-07-003. US Environmental Protection Agency, Washington, DC. (http://water.epa.gov/type/lakes/lakessurvey_index.cfm#CP_JUMP_474534)

USEPA. 2006. Survey of the Nation's Lakes. Lake Evaluation Guidelines. EPA 841-B-06-003. US Environmental Protection Agency, Washington, DC.

12. TABLE OF ACRONYMS

EPA	Environmental Protection Agency
NLA	National Lakes Assessment
QA/QC	Quality Assurance/Quality Control
WWW	World Wide Web

13. PERSONNEL INFORMATION

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